



Third West Weekly Report Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbarnitz@utah.gov)' 03/15/2012 09:47 AM

**Hide Details** 

From: "Shepherd, Michael" < Michael. Shepherd@PacifiCorp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)'" <cbarnitz@utah.gov>

### 7 Attachments











Weekly Reports 03-05 to 03-09-12.pdf Third West Weekly Log 2012-10.pdf 231071-1.pdf 231269-1.pdf 231270-1.pdf





231362-1R.pdf 231462-1.pdf

Joyce & Craig,

Attached are the reports for the week of March 5, 2012.

We had positive hits of chrysotile on Thursday and Friday last week.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
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801.220.2797 Fax
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	DAILY CHECKLIST
DATE:	03/05/11
<u>General</u>	
NA	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
1111	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Comp	lete all CSHASP Forms (for applicable activities planned for that day)
NA .	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavadon
	sites and track out prevention.
<u> </u>	Review sign-in/sign-out log throughout and at the end of the workday.
☑	Secure the site at the end of the workday
Sampling	•
NA	Soil Confirmation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





☑		Electronically file photo files into the on-site database
		Complete Field Documentation
		Field Sample Data Sheets (FSDS)
	$\square$	Logbook
		On-site computer database
		Label each sample media with a unique number
$\square$		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>03/05/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	v
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	,
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	2
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.		*	x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	X			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			e e e e e e e e e e e e e e e e e e e
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			X	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone active once excavation began.

8 trucks with pups were loaded and washed out throughout the day.

After hauling material out of the yard, Newman continued backfilling and compaction in the bay 2 area.

CVE fabricators sealed bolt cut outs on piers and began lean up of some equipment and materials.

CVE line crew continued setting up buss work.

Weather was warm, dry and sunny with highs around 60 and light afternoon breezes.





	DAILY CHECKLIST
OATE:	03/06/11
Camana	1
<u>Genera</u> NA	
	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
NA	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues
	and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA NA	Complete Employee Meeting Record Form B (where applicable)
NA NA	Document required Respirator Training completion with Form H
NA NA	Record times and numbers of dump trucks and trailers as they leave the site with
NA.	contaminated material.
ΝA	Confirm return of waste material manifest documents for each load with site
'A	manager.
NA Con	riplete all CSHASP Forms (for applicable activities planned for that day)
NA NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
$\square$	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
$\square$	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
$\overline{\square}$	Review sign-in/sign-out log throughout and at the end of the workday.
$\square$	Secure the site at the end of the workday
<u>Sam<b>p</b>li</u>	ng
NΑ	Soil Confirmation sampling for any newly excavated areas
<b>7</b>	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





		Electronically file photo files into the on-site database
☑		Complete Field Documentation
	$\square$	Field Sample Data Sheets (FSDS)
		Logbook
	$\square$	On-site computer database
abla		Label each sample media with a unique number
abla		Seal sample(s) in zip lock plastic bags
☒		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☒		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
abla		Review and disseminate sample results as received from the laboratories to Project
		Manager and other appropriate managers and employees
		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 03/06/12			
Location:3rd West, 1st South, SLC	Job Number:			
Survey Conducted By: Justin Kargis	Title:			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			2

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.	e		x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	,
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	X			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.		×	х	-
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x	is .		
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.	8		x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	*
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.		,	х	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

No exclusion zone work done today.

Transformers for both bays arrived in the morning. Due to heavy crane availability, they were off loaded and held in the parking lot overnight. The 540-ton crane was set up in the yard to be ready for placing the transformers the morning of 3/7.

CVE line crew continued working on tubular and wire buss work and mobilized switches in bay 1.

CVE fabricators applied plaster and grout to foundation piers in bay 1.

Newman continued backfilling and compaction in the bay 2 area.





# 3<sup>RD</sup> WEST SUBSTATION REMEDIATION PROJECT **HEALTH SAFETY MANAGER (HSM)**

	DAILY CHECKLIST
DATE:	03/07/11
<u>Genera</u>	1
NA	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
1112	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Com	pplete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA <sup>°</sup>	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
Ø	Exclusion zone operations are practiced as instructed.
	☐ Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
$\square$	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
•	Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
Ø	Review sign-in/sign-out log throughout and at the end of the workday.
<b>I</b>	Secure the site at the end of the workday
Sampli	n <b>g</b>
NA	Soil Confirmation sampling for any newly excavated areas
<b>☑</b>	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soi removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





		Electronically file photo files into the on-site database
		Complete Field Documentation
	$\overline{\mathbf{A}}$	Field Sample Data Sheets (FSDS)
	$\overline{\mathbf{A}}$	Logbook
	$\Box$	On-site computer database
		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Ø		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
abla		Review and disseminate sample results as received from the laboratories to Project
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Project: 3rd West Sub Station	Date: <u>03/07/12</u>
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
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1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.		a	x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
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1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	,
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
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1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

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1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
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1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	х			
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1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

No exclusion zone work done today.

Transformers were placed on pads in both bay areas.

CVE line crew continued assembling buss work and other componentry on structural steel in bay 1.

CVE fabricators applied plaster to exposed concrete piers.

STR began assembling and testing transformer in bay 2.

Newman continued backfilling and compaction in bay 2 area.

Weather was dry, cool and sunny with temperatures in the mid 30's and moderate winds throughout the day. Overnight snow of about 2 inches.





	DAILY CHECKLIST
DATE:	03/08/11
<u>General</u>	Work and Health and Cafety Inquestion
NA NA	Work area Health and Safety Inspection
ÑΑ	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
NA	activities for the day Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
. NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Comp	lete all CSHASP Forms (for applicable activities planned for that day)
• <b>NA</b>	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
$\square$	Exclusion zone operations are practiced as instructed.
	Decontamination unit is working properly.
	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
-	sites and track out prevention.
<b>☑</b>	Review sign-in/sign-out log throughout and at the end of the workday.  Secure the site at the end of the workday
	Secure the site at the end of the workday
Sampling	
NA	Soil Confirmation sampling for any newly excavated areas
$\square$	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
•	removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





☑		Electronically file photo files into the on-site database
☑		Complete Field Documentation
	$\square$	Field Sample Data Sheets (FSDS)
	$\square$	Logbook
	$\square$	On-site computer database
$\square$		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
◩		Review and disseminate sample results as received from the laboratories to Project
M		Manager and other appropriate managers and employees  Electronically file sample reports into on-site database
(V)		Electronically the sample reports into on-site database



Project: 3rd	West Sub Station	on Date: 03/07/12	
Location: _	3 <sup>rd</sup> West, 1 <sup>st</sup> South, SLC	Job Number:	
Survey Con	ducted By: Justin Kargis	Title:	=

Standard	Title	☐ In Compliance	Out of Compliance	D N/A	Corrective Action Taken and
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	* -
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	1	,	x	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.	*		x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			26
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.	x			
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			e e
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.		RI .	х	4
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.	x			
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	8		x	2
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.	9	=	x	

Exclusion zone active once excavations began.

Newman stockpiled contaminated material in EZ for about an hour then continued backfilling and compaction in the bay 2 area. The boundary fence along the east side of the EZ has become somewhat buried by backfill material and will need to be relocated up to the grade level as soon as possible.

CVE line crew continued assembling buss work and attaching insulators on steel framework.

CVE fabricators prepared to pour circuit breaker pads in bay 2 and drilled drainage holes in foundation piers in bay 1.

STR continued assembling transformer components and testing/inspecting transformers.





	<u>DAILY CHECKLIST</u>
DATE:	3/09/12
<u>General</u> ✓	Work area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA ·	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
-	plete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
◩	Exclusion zone operations are practiced as instructed.
☑	Decontamination unit is working properly.
Ø	Workers are using decontamination unit as instructed.
☑	Workers use personal protective equipment properly.
<b>☑</b> . ·	Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
☑	Observe control measures for dust and fugitive materials i.e. watering excavation sites and
_	track out prevention.
☑	Review sign-in/sign-out log throughout and at the end of the workday.
☑	Secure the site at the end of the workday
<u>Samplin</u>	g .
NA	Soil Confirmation sampling for any newly excavated areas
☑	Stationary Air Monitoring during contaminated soil removal around the perimeter of the
TAT A	exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel
	determined necessary
Ţ☑	Electronically file photo files into the on-site database





⊻	Complete Field Documentation
$\overline{\mathbf{V}}$	Field Sample Data Sheets (FSDS)
$\overline{\mathbf{A}}$	Logbook
NA	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
Ø	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
NA	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
NA	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 3/09/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.	8		х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			x	
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	,
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.	x			, ,
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	u v
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			ų
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.		,	x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			x	. 4
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			x	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

Standard	Title	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х		12.	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			х	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			x	,
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	•
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.	х			

Exclusion zone active once excavations began.

Newman loaded and washed out 8 trucks with trailers throughout the day.

EZ fencing along east boundary will need to be pulled up and placed at grade as soon as possible as it is being somewhat buried by backfill material.

CVE fabricators poured foundations for circuit breakers and one of the f-structures in bay 2.

CVE line crew continued working on assembling components on structural steel.

STR continued assembly and inspection of transformers.

**CVE** electricians



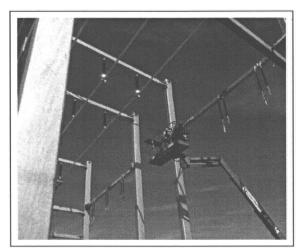
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

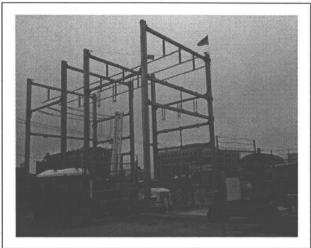
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 03/05/12	FILE:	

### SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 03/06/12	FILE:	3

SITE PHOTOGRAPHS





РНОТО 1



**PHOTO 2** 



РНОТО 3



РНОТО 4

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 03/07/12	FILE:	

### SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3



PHOTO 4

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

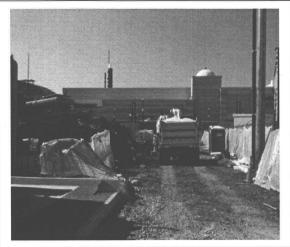
DESIGNED BY:	SCALE:	REVIEWED BY: DCR
DRAWN BY: JMK	DATE 03/08/12	FILE:

### SITE PHOTOGRAPHS





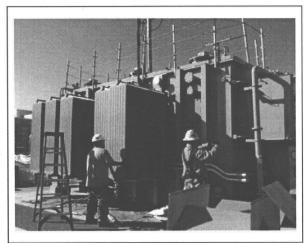
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE: 03/09/12	FILE:	

### SITE PHOTOGRAPHS



PROJECT NAME:		Third Wes	st Sub - Rebu	ıild	DATE:	Mon	day, March 5,	2012
PO & Work Order NO. :	· · ·	30000780	050 / 100358	03	MAIN CONT	RACTOR	: Cache Valle	y Electric
Crew Start Time:	6	:55	Cr	rew Stop Time:	17:25	5	Tot Hrs mns:	10:30
FCR Start Time:	6	:36	F	CR Stop Time:	17:35	5	Tot Hrs mns:	10:59
Use military time format 00:								
,								
WEATHER CONDITIONS	:		S	Sun <b>n</b> y, 38 degr	ees i <b>n AM</b> - 60 d	legrees in	PM	
DESCRIPTION: (work pe	rformed	d. gen <b>er</b> al c	omments. ir	nstructions to	contractor.#c	of crew me	embers onsite	
R&R set up four monitors. C\transformer oil containment w foundations and hauled some in the southeast bay. Newma backfill, and placed and comp = 4, Geary Tmcking = 4, R&R	all but wi ma <b>t</b> erial n loaded acted on	ll redo it with s from the job out eight true e lift in the ar	a different gro osite to their sh cks/pups with o	uting material. Top. CVE Line Contaminated ma	They dry packed, Crew hung two an aterials, hauled in	with non-sho d one-half so approximat	rink grout, the tw ets of 1272 bund	o north G lled jumpers f ABC for
·			<del> · · · · · · · · · · · · · · · · · </del>		<u></u>			
IF WORKING IN ENERGIZ								
Dispatcher login, name and til		Barry Nielso						
Dispatcher logout, name and	time:	Al Swinski 1	735		IMANE DIATE O	ODDECTIV	/E AOTION TA	LICENI:
DISCREPANCIES: 3/2 - Two aux relays missing from	Dadasa	- Cuitabaaa			Pederson indicates			
3/2 - Two aux relays missing from	redersor	ii Switchgear.			PM's and will be sh		Own by redeison a	allu Kivir
		-				-	<del></del>	
							<u> </u>	
11/30 - Identified an additional ref	taining wa	Il that is below	grade and does	not show on the	Will excavate to de	termine dime	nsions.	
Demo Plan. 12/15 - Excavated to locate the 4	6 kV cable	es exiting the w	vest side of the y	ard. Dug 8' and	Sent e-mail to Rog	er F.		
didn't find them. Will try again. A			deeper than de	sign of new bank				
DELAYS OR LOST TIME	ENCOU	INIERED:						
		•	`				•	
FOLUDIA FILT (working and	- 11	1 :41-1.			<del></del>	•		
EQUIPMENT (working, de CVE fab crew: Portable toilet (2)			ce trailer conex	exclusion zone o	onex. (2) tool trails	er crew truck	CVE Line Crew	Pickup (2)
boom truck, JLG (2), tool trailer.							012 2,110 01011.	. lokup (2),
1					•			
OSHA Recordable Safety	Incide	n <b>ts:</b>	·····			Reported	by:	Time:



PROJECT NAME:	Third Wes	st Sub - Rebuild	DATE:	Tues	day, March 6, 2	2012
PO & Work Order NO. :	30000780	050 / 10035803	MAIN CONT	Cache Valley	/ Electric	
Crew Start Time:	6:55	Crew Stop Time:	19:10	, · )	Tot Hrs mns:	12:15
FCR Start Time:	6:43	FCR Stop Time:	19:15	5	Tot Hrs mns:	12:32
Use military time format 00:00					_	
						•
WEATHER CONDITIONS:		High Clouds,	breezy, 45 degr	ees in AM -		
DESCRIPTION: (work perfe	ormed, general c	omments, instructions to	contractor, # c	of crew me	mbers onsite.)	)
Smaller crane arrived at 1:30 an until 5:30 and was positioned an seminar held in the construction personnel were on site. CVE Lisite, and hung jumpers from the compaction and testing of the lift on the perimeter failed so Newrre 1, Wilding = 1, IRH =2, Consci	Id counter-weights in trailer. CVE Fab Cone Crew completed upper bus down to t at approx. 12:30. Sonan will hit it again in	nstalled before shutting down a rew only has two men on site thanging the bundled jumpers the ABS positions. Newman second lift was completed at a nother moming.	about 7:10. CVE coday doing grouti in the south section pread a new lift in	personnel at ng until after on of the bay n the excava nost tests we	tended an equip the class, then f , mobed three Al ted area and con re satisfactory, b	ment lifting four CVE BS to the npleted out several
	·					
IF WORKING IN ENERGIZE	D SUBSTATION:			-		
Dispatcher login, name and time				<del></del>		
Dispatcher logout, name and time						
DISCREPANCIES:	Tank Deta 101		IMMEDIATE C	ORRECTIV	E ACTION TA	KEN:
3/2 - Two aux relays missing from P	ederson Switchgear.		Pederson indicates PM's and will be sh	these are kno		
11/30 - Identified an additional retair Demo Plan.	ning wall that is below	grade and does not show on the	Will excavate to de	termine dimer	nsions.	
12/15 - Excavated to locate the 46 k			Sent e-mail to Rogo	er F.		
DELAYS OR LOST TIME EI						
<b>EQUIPMENT (working, deli</b> CVE fab crew: Portable toilet (2), for		ce trailer conex exclusion zone o	onex (2) tool traile	r crew trick	CVF Line Crew F	Pickun (2)
boom truck, JLG (2), tool trailer. Ne					CVE LINE Crew: F	-іскир (2),
OSHA Recordable Safety I	ncidents:			Reported	by:	Time:
			•	1		



PROJECT NAME:	Third West	Sub - Rebuild	DATE:	Wednesday, March 7, 2012		
PO & Work Order NO. :	300007805	50 / 10035803	MAIN CONTI	RACTOR :	Cache Valle	y Electric
Crew Start Time:	6:30	Crew Stop Time:	18:00		Tot Hrs mns:	11:30
FCR Start Time:	6:21	FCR Stop Time:	18:10		Tot Hrs mns:	11:49
Use military time format 00:00		·			-	
,						
WEATHER CONDITIONS:	-	High Clouds, bree	zy, 45 degrees l	n AM - Sno	owing	
DESCRIPTION: (work perfor R&R set up four monitors. IRH and Hundai to assemble and process in xfmr, S/N 2, had an empty dry air had an empty dry air tank, and did and after 24 hours will perfonn a clot. IRH and Wagstaff demobed from paction tests are passing and circuit breaker foundations and the side of the structure over the CBs and ran temp power to the switch 4, R&R = 1, Wilding = 1, IRH =2,	In the transformers are tank, but the xfmr so I not have any presoned they point test. The form the site by about they will need one by Foundation. CV and the switch for its pear building.	at 6:30 and offloaded the two rived around 8:00 and started still had pressure and the dew sure in the xfmr. STR has go third accessory truck was or ut 10:30. Compaction tests p more lift before achieving a E Fab Crew grouted foundati	o transformers by S I opening accesso point test was good point test was good point test was good site this morning passed this morning subgrade which with ons. CVE Line Crew/E Electrical Crew	9:30. STR, ny boxes. S dd. Howeve e dry air so than 1RH unling and Newn all allow CVE ew installed ran electric	the contractor his TR identified that r, the east xfmr, they can pressul loaded and place nan is spreading to set forms for I the two switches ity to the Line Co	red by at the west S/N 1 also rize the xfmi ed in parking the next lift the last two es on the eas rew trailer
IF WORKING IN ENERGIZED	CHRCTATION					,
Dispatcher login, name and time:	Joe Bryant 06	21				
Dispatcher logout, name and time						
DISCREPANCIES:	.   Odo Informació	2 1010	IMMEDIATE CO	DRRECTIV	E ACTION TA	KEN:
3/2 - Two aux relays missing from Ped	derson Switchgear.		Pederson indicates			
			PM's and will be shi			
3/6 - Issue with hole sizes where ABS			Steve Davis authori			(5/8" diameter
and switch base has 11/16 holes. 3/6 - 4 HP on switches aren't built to to	ake bundled conducto	or iumpers	X 2" square X 1/8" t Roger Fuerst is reco	nick, ∠ eacn) ommending a	bifurcating conne	ctor CVE to
			discuss with Roger			
11/30 - Identified an additional retainir Demo Plan.	ng wall that is below g	rade and does not show on the	Will excavate to det	ermine dimer	nsions.	
12/15 - Excavated to locate the 46 kV	cables exiting the We	st side of the yard. Dug 8' and	Sent e-mail to Roge	r F.		
didn't find them. Will try again. Actua		leeger than design of new bank				
DELAYS OR LOST TIME EN					<del></del>	
STR identified that S/N 1 xfmr, east xf pressurized the xfmr at 3.5 psi trefore				ormer. SIK	secured a new dry	air bottie and
EQUIPMENT (working, deliv	ered, idle):					
CVE fab crew: Portable toilet (3), fork boom truck, JLG (2), tool trailer. New truck. Wagstaff/IRH = 550 Ton crane	lift, 1 dumpster, office man: trachoe (4), loa	der, bobcat, mini-ex (2), water tn	uck, compactor, back	khoe. STR =		
OSHA Recordable Safety Inc	cidents:			Repo <b>rt</b> ed	bv:	 Time:
CO. IA NOOT dable Galoty III					- y ·	



PROJECT NAME:	Third We	st Sub - Rebuild	DATE:	Thursday, Mar	ch 8, 2012		
PO & Work Order NO. :	3000078	050 / 10035803	MAIN CONT	RACTOR : Cache	Valley Electric		
Crew Start Time:	6:45	Crew Stop Time:	18:00	) Tot Hrs m	nns: 11:15		
FCR Start Time:	6:35	FCR Stop Time:	18:05	Tot Hrs m	nns: 11:30		
Use military time format 00:00							
,					•		
WEATHER CONDITIONS:		Sunny, 30 degr	ees in <b>AM</b> - 45 o	legrees in PM			
DESCRIPTION: (work perfor R&R set up four monitors. CVE F							
forms and rebar for the two west b vertical 4" bus and expansion joint in the EZ and placed a final lift in t Crew = 3, Newman = 3, STR = 4	s down to the #1 he excavation are	xfmr switch CVE Electrical (ea south of #2 transformer.	Crew installed box		man moved spoil		
IF WORKING IN ENERGIZED							
Dispatcher login, name and time:	Manny LuHa						
Dispatcher logout, name and time	Al Swinski 1	805			·		
DISCREPANCIES:				ORRECTIVE ACTIO			
3/2 - Two aux relays missing from Ped	erson Switchgear.			these are known by Pede	erson and RMP		
3/6 - Issue with hole sizes where ABS	attach to the struct	ural steel Steel has 1-1/8" holes	PM's and will be sh Steve Davis author	ilooed soor ized us to use square was	shers (5/8" diameter		
and switch base has 11/16 holes.			X 2" square X 1/8"				
3/6 - 4 HP on switches aren't built to ta	ike bundled conduc	ctor jumpers.	Roger Fuerst is recommending a bifurcating connector. CVE to				
11/30 - Identified an additional retainin Demo Plan.	g wall that is below	grade and does not show on the		to determine which fitting termine dimensions.	to use.		
12/15 - Excavated to locate the 46 kV didn't find them. Will try again. Actual	•		Sent e-mail to Rog	er F.			
DELAYS OR LOST TIME ENG							
STR reports that the 3.5 psi charge on Mike.	Xfmr #1 was dowr	n to .5 psi this moming. STR is pro	ceeding to attempt t	o locate the leak, or leaks	. Notified Ken and		
EQUIPMENT (working, delive	ered. idle):						
CVE fab crew: Portable toilet (3), fork boom tmck, JLG (2), tool trailer. Newstmck.	lift, 1 dumpster, offi						
OSHA Basardakia Cafarria	idanta	·		Danastad h	T:=		
OSHA Recordable Safety Inc	idents:			Reported by:	Time:		
		<del></del>					



PROJECT NAME:	•	Third West Sub -	Rebuild	DATE :	Fric	lay, <b>M</b> arch 9, 2	2012	
PO & Work Order NO. :		3000078050 / 100	035803	MAIN CONT	RACTOR	R: Cache Valley Electric		
Crew Start Time:	6:50	)	Crew Stop Time:	18:10	)	Tot Hrs mns:	11:20	
FCR Start Time:	6:35	5	FCR Stop Time:	18:15	5	Tot Hrs mns:	11:40	
Use military time format 00:00		· · · · · · · · · · · · · · · · · · ·	,			•		
Coommunity anno remains conse								
WEATHER CONDITIONS:	_	·	Sunny, 30 degr	ees in <b>AM</b> - 55 d	legrees in l	РМ		
DESCRIPTION: (work performance) R&R set up four monitors. CVE Crew made up 1272 jumpers for the AM and four in the PM for a t control building and started placi On Thursday, STR identified that contacted Hyundai and they are keeping a positive pressure on X stopped by to observe the progre Crew = 2, Newman = 5, STR =	Fab Creve the breat otal of 8 ong lifts of one of t sending fmr #1 wess on th	w formed and poure kers. CVE Electric for the day and 187 f ABC in that area. the CT terminal bloc two different types while waiting for the te assembly of the to	ed the second F fdn and cal Crew made up con total for the job. New Compaction on the flicks on Xfmr #1 was crof CT tenninal blocks part to arrive. STR ha	nd the second set aduits for CCVTs wman proofed the rest lift passed and racked and is the so, hoping that one of	of two brea Newman Id bottom of the Newman st suspected so of them is the diators on Tr	ker foundations baded out four to ne excavation up arted placing the ource of the lead e correct one. \$ ansformer #2.	CVE Line mcks/pups ir nder the old e second lift. c. They STR is Gen Foster	
IF WORKING IN ENERGIZE	D SUBS	STATION:		· · · ·	<del> </del>	<del> </del>		
Dispatcher login, name and time	: M	anny LuHaun 0635						
Dispatcher logout, name and tim	e: <b>K</b> i	m Batt 1825	·					
DISCREPANCIES:		•		IMMEDIATE C				
3/2 - Two aux relays missing from Pe	ederson S	Switchgear.		Pederson indicates		own by Pederson	and RMP	
				PM's and will be sh	ijooed soor			
						( <del>*</del> -	•	
3/6 - 4 HP on switches aren't built to	take bund	dled conductor jumper	rs.	RMP has provided	a Travis-Patt	em Cat #. CVE to	provide:	
11/30 - Identified an additional retain	ing wall th	nat is below grade and	d does not show on the	Will excavate to de	termin <b>e</b> dime	nsions.		
Demo Plan. 12/15 - Excavated to locate the 46 k	/ cables e	exiting the west side o	of the vard Dug 8' and	Sent e-mail to Roge	er F		<del></del>	
didn't find them. Will try again. Actu	-			Cont o man to mag	• • • • • • • • • • • • • • • • • • • •			
<b>DELAYS OR LOST TIME EN</b>	COUN.	TERED:	_					
STR reports that the 3.5 psi charge of Mike.	n Xfmr#	1 was down to .5 psi t	this moming. STR is pro	ceeding to attempt t	to locate the le	eak, or leaks. Not	ified Ken and	
INING.								
							•	
	<del></del>						-	
CVE fab crew: Portable toilet (3), for boom track, JLG (2), tool trailer. New track.	rklift, 1 du	mpster, office trailer, of	conex , exclusion zone cocat, mini-ex (2), water to	conex, (2), tool trailenck, compactor, bac	er, crew tmck. khoe. STR =	CVE Line Crew: crew tmck, tool tr	Pickup (2), ailer, boom	
OSHA Recordable Safety Ir	cident				Reported	hv:	Time:	
Con A Recordable Salety II	ioidelli.	J.			Teported	~j.		
			······································	<del></del>				



PROJECT NAME:	Third Wes	st Sub - Rebuild	DATE: Saturday, March 10, 2012					
PO & Work Order NO. :	30000780	050 / 10035803	MAIN CONTRACTOR	: Cache Valle	y Electric			
Crew Start Time:	6:50	Crew Stop Time:	18:20	Tot Hrs mns:	11:30			
FCR Start Time:	6:40	FCR Stop Time:	17:30	Tot Hrs mns:	10:50			
Use military time format 00:0		FCR Stop Time.	17.50	_ 101 mis illis	10.50			
ose mintary unie iorniat 00.0								
WEATHER CONDITIONS	<u> </u>	Sunny - 35 degre	es in AM, 60 degrees in th	e PM				
DESCRIPTION: (work per	rformed, general c	omments, instructions to	contractor, # of crew me	embers onsite	.)			
is consumed in moving the pa	in separate containers llets of equipment fror	liators and high side CTs in Tr s and STR will have to install b n the parking lot into the yard a trical Crew = 0, Newman =0, \$	oth the HV and LV CTs here and unpacking it. Wilding pic	at the site. Quit	e a bit of tin			
			•					
			•					
			•					
		·			ì			
IF WORKING IN ENERGIZ	FD SUBSTATION	· · · · · · · · · · · · · · · · · · ·						
Dispatcher login, name and tir		<del></del>	· · · · · · · · · · · · · · · · · · ·					
Dispatcher logout, name and t		<del></del>						
DISCREPANCIES:			IMMEDIATE CORRECTIV	/E ACTION TA	KEN:			
3/2 - Two aux relays missing from	Pederson Switchgear.		Pederson indicates these are kn					
	<u> </u>		PM's and will be shiooed soor					
	<del></del>		-					
<u></u>								
11/30 - Identified an additional ret Demo Plan.	aining Wall that is below	grade and does not show on the	Will excavate to determine dime	nsions.				
12/15 - Excavated to locate the 46	kV cables exiting the w	est side of the yard. Dug 8' and	Sent e-mail to Roger F.					
didn't find them. Will try again. A		deeoer than design of new bank						
DELAYS OR LOST TIME								
New CT terminal block has been or pressure on xfmr #1 this morning			sitive pressure on Xfmr #1 until n	ew block arrives.	There was no			
EQUIPMENT (working, de	elivered, idle):							
CVE fab crew Portable toilet (3), toom track, JLG (2), tool trailer. I tmck.								
<u></u>			· <u></u>					
OSHA Recordable Safety	Incidents:		Reported	by:	Time:			
	<del></del>							
L								





March 7, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report:

RES 231071-1

Project # / P.O. #
Project Description:

None Given 3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 231071-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

**RES Job Number:** 

RES 231071-1

Client:

R & R Environmental.

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

March 6, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 7, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	1D Ni	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-030512 W	EM	871702	0.0900	954	ND	0.0045	BAS	BAS
3W-030512 N	EM	87170 <b>3</b>	0.0900	954	ND	0.0045	BAS	BAS
3W-030512 E	ЕМ	871704	0.0900	961	ND	0.0045	BAS	BAS
3W-030512 S	EM	871705	0.0900	963	· ND	0.0044	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 3 7 12 Due Time: 940-

# M01 Logan 81 Oenver, CO 60316 • Ph: 303 964-t886 • Fax 303-477-4275 • Toll Free \$86 RESI-ENV

Pages: 308-609-8088 INVOICE TO: (IF DIFFERENT)

	INVOIC	INVOICE TO: (IF DIFFERENT)						CONTACT !!								NFORMATION:							
Company. RIR Fundamental	Company.						Cont	oot ()	we.	120	ske	her					1		$\mathfrak{J}_{\nu_{\lambda}}$	· Kangle			
Address: 47 W 9000 S # 2	Address:						Phor	0:									Phor						
Sandy Ut. 84070	W(0									Fax:													
							Oak/	nager: (	301	ક્ય	<u>(-u</u>	35					Cell	pager:	801	822-521	<del>?</del>		
Project Number and/or P.O. #: Project Description/Location: 218 Lival C.M. OMO							•	Data O															
Project Doesn'ption/Location: 32 West Sub- (LMP)							ليك	tue	<u> </u>	ne	M	ro.c	0~	<u> </u>									
ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm			N.	7. m 7. A.		RE	OUE	STE	D AN	ALY	SIS					VA	LIDI	MATI	RIX CO	OES	LA	B NOTES	S:
PLM / PCM / TEN RUSH (Same Day) K PRIORITY (Naxt	Day)STANDARD		1		$\prod$		7	$\top$	П	$\neg \neg$		$\top$			1	Air :	- A		В	uik = 8			
(Rush PCM ≈ 2hr, TEM ≈ 6hr.)			1			. I	1	1		1 1			j	1		Dust	= D		Pi	aint = P			
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm			1	}		•	1 1	- 1	1	- [ - [		11	ì		L	Soli	= S		W	ipe = W			
Metal(s) / Oust RUSH 24 hr 3-5 Day		1 1-	1	널	1 1	1	1 1	- 1		اء ا		11	1				= SW			= Food	<u> </u>		
RCRA 8 / Metals & Welding  RUSH 5 day 10 day	**Prtor notificat		\$	Quant.	1 1		Scan	- }	11	Ę.		11	٤	_	Orinki	ng W				Water = WW	<b></b>		
I dille Scall / TOLF	turnarounde	i.**	Point Count	7 5		}	ξ.	- {	11	擅		{	150	E					= Other		<del> </del>		
Organics24 hr 3 day5 Day	<b>-</b> 332-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-	era e a e a e a e	₹ B	0, ts	1		Metaks	- 1	11	Sca		5 5	Quantification	ž		IME	1/821	approv	ed wibs	media only**	<b>├</b> -		
MICROBIOLOGY LABORATORY HOORS: Weekdays: 9am - E.coll 0157:H7, Coliforms, S.aureus 24 hr. 2 De		<u> Marie et de la co</u>	4 8	\ #=	1.	1	1 1	1	11	8	ntification	Quantification	E O	Έ	1	1		1		}	<b> </b>		
E.coll 0157:H7, Coliforms, S.aureus 24 hr. 2 De Salmonella, Listeria, E.coll, APC, Y & M 48 Hr. 3-5			Ē	7402, SO-Ind	SHA	أووا	12		} }	*	후			5	1	1		1		1	<u> </u>		
	48 Hr3 Day	5 Day	lg.	Level II, Towar, IS	6		글통	- 1	+	설	Quantific	1-1	2 E	80	1		}	[			<del> </del>		
**Turnarbusul times satisfitish a faboratory priority, subject to laboratory yolume a			god.		7400B,	Respirable	- Analyte(s) TCL°, Welding Fume,	丰字	\ <u>\</u> \\	]8]	5	اداد	2 3	TĂ.		1	1	1		Ì			
apply for afterhours, weekends and holidays.			Į	\$ ₹			و ا	چ ک	57.117.	취	<u> </u>	. +	‡ ±	Ž	Volume	وا	, e	1				,	(7. j.s.)
Special Instructions:			ا ق ا	AHERA, Jamt, Mic	7400A	ا ق	۲	ORGANICS - METH	E.coff 0157.	Aerobic Plate	E.cofi: +/	S.aureus:	.:. • 196	SAMPLER'S INITIALS OR OTHER NOTES	× 2	8	# Containers		_	_	EM Nu	mber (La)	poratary
Į.				) · 5~	1 . I	12	METALS RCRA 8.	AS S	8	F (5)	8 E	Sas	∞ Ş	<u>=</u>	Sample V	Matrix	1	Co	Date llected	Time Collected		Use Only)	
Client sample ID nuinber (Sainpla ID's must be uni	oue)		12	Semi	ž	DUST	# Q	g _		<b>ACRO</b>	BIOI	.00Y		S	8 2	2	#	- TO	n/od/yy	niv/mm s/p	<u> </u>		,, a N <sub>1</sub> , j
1 3W-030512W			[	X				7	$\Pi$		П	$\Pi$		}	195	1 A	-	360	sliz		8 =	1170	>2.
2 3W-0309 7 N			<b>1</b> , 1							\$ 5					95	7			T				3
3 3W-030512 E									П			$\top$	1		961	1	1		T				4
4 3W 030512 S			1	J			Ž.								963				1	N. W. C.			5
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	ditionat samples shall	be listed or	n atta	ched lo	ong fo	rm.)	لبسينة	تتهند	المحوالة			-1: ::1			.H	نسمانه					-		-
NOTE: flEl will analyze incoming samples based upon information received and will no	t be responsible for arrors o	r omiasiona in	cstctila	tions res	ulting f	from the	inaccu	racy of	arloina	data.	By sig	ning d	ent/co	mpany a	presenta	tive ag	roes th	ıal subr	njsston of	I the following st	mples for ro	qus tied	
analysis as indicated on this Chain of Custody shall-constitute an analytical services ag	<del></del>	S OF NET 30 da	ya, tau	ure to co	mply w	vilh payr		1-		in 8 1.	5% m	onthry	nieras	sun;na	ge.			<u> </u>					
Relimquished By:	Fed Ex				Date	e/Time	3: 3	losi	12						}s	ampl	e Co	ndition	n: (	On Ice	Sealed	jnlact	
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Received By:  Results: Contact Phone Email Fax Dal	Date/Timo:  e Time	<u>-</u>	tials		ontact		arrier		hono	-/	معملان	<del></del>			Date				Tim	ne	Initia	als	
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Tourist Transmitter												<u> </u>								<del>:</del> .			

### **Attachment I**

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

### Asbestos Type

### Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite ·	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
Т	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

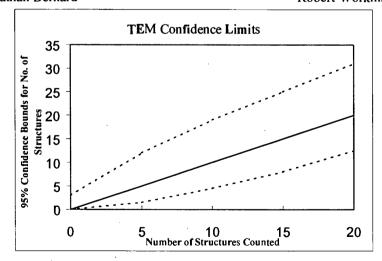
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

#### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX/N)S
Voltage (KV)	100 KV
Magnification	20KX JIOKX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (nam2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RHR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	459
Date received by lab	3/1/2
Lab Job Number:	23107
Lab Sample Number:	871702

Analyzed by	313
Analysis date	3/7/12
Method (D=Dlrect, I=Indirect, iA=Indlrect, ashed)	Ь
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	- Date Analyzed

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Total Resuspension Volume (ml)  Volume Applied to secondary filler (ml)	

Grid	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
	Ond Opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-1	MZ												
	615-4	ND			Pup	A	70%	in tint	<u>-</u>	5-10	The delans			_
	F5-4	ND			Pus	1/2	~A				·			
	E5-1	ND			,		<i>h</i>					·		
6	H6-1	ND					1B	3/7/12						
	Golf-	MD					//	1. /		· · · · · · · · · · · · · · · · · · ·				
	F6-1	ND												
	H43	M												
	G14-3	ND				,								
											·			

Laboratory name:	REI
Instmment	JEOL 100 CX (N) S
Voltaae (KV)	100 KV
Magnification	20KX NOKX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Alr, D=Dusf):	A
Air volume (L) or dust area (cm2)	954
Date received by lab	
Lab Job Number:	23 07
Lab Sample Number:	871704

Grid storage location	Month Analyzed
Counting rules (ISO, AHERA, ASTM)	AH
IA=Indirect, ashed)	7
Method (D=D)rect, 1=Indirect,	· Straining its area of st
Analysis date	3/2/12
Analyzed by	する

r-ractor Calculation (indirect Pr	eps Only).
Fraction of primary filter used	
Totat Resuspension Voluma (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Grid Opening Structure		No. of St	ructures	Dimensions		Identification	Mineral Class				1 = yes, blank = no		
	ind Glid Opening	Type	Primary	Total	Length	Width		Amphilbols	·c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K2-6	MZ												
	HZ-6	MD				Pmp	A	70 / nd	mt	<	-10% de	bus_		<u> </u>
	612-6	MD				Pro	3	90 foint	int	·	5-10% del	25_		
	F2-6	ND				,								
	EZ-6	ND						1B	3/7	12				 
13	G4-1	ND							' '					·
· ·	F4-1	ND						, 				<u> </u>		
·	E4-1	MD												
·.	C4-1	M												
														:

Laboratory name:	REI
Instrument	JEOL 100 CX/N)S
Voltage (KV)	100 (0
Magnification	ZOKX HOKX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385 A 77
Secondary Filter Area (mm2)	
QA Type	

Client ;	RHR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	961
Date received by lab	2/6/12
Lab Job Number:	25,07
Lab Sample Number:	871704

Scope Alignment	Date Analyzed
Grid storage location	Mohth Analyzed
Counting rules (ISO, AHERA, ASTM)	MAH
Method (D=Dirsct, l=Indirect, IAsIndirect, ashed)	D
Analysis date	3/7/2
Analyzed by	116

F-Factor Calculation (Indirect Prep	s Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volums Applied to secondary tiller	<del> </del>

Grid	Grid Grid Opening Structure		e No. of Structures Dimension		nsions	Identification	Mineral Class			1 ≈ yes, blank ≈ no				
		Тура	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	136	ND						!						
	63-6	ND				Par	o A	90% in	fre	4	5-10/0 N	epy		
	F3-6	ND				But	6	60 to in	huf		5-10%	kbi	3	
	E36	NO				· ·		1h						
	C3-6	ND						1/2	1/2					
B	H5-4	ND			· .		/							
	65-4	ND					·			ļ 				<u> </u>
	F5-4	40												
	E5-4	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX/N)S
Voltage (KV)	100 KV
Magnification	ZOKX YOKX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	· · · · · · · · · · · · · · · · · · ·
OA Type	1000年10日本企业公司的中央公司。 1000年10日本公司的中央公司的公司。

Client :	- R+12
Sample Type (A=Air, D=Dust):	与WA 基列图
Air volume (L) or dust area (cm2)	763
Date received by lab	13/6/21
Lab Job Number:	23.07
Lab Sample Number:	871706

Lab Job Number:	23,07
Lab Sample Number:	871705
F-Factor Calculation (Indirect P	reps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Scope Alignment	Date Analyzed
Grid storage location	Month Analyzed
Counting rules (ISO, AHERA, ASTM)	Á
Method (D=Olrect, !=Indirect, IA=Indirect, ashed)	The book
Analysis date	3/1/2
Analyzed by	JB

Grid	Grid Opening	Structure Type	No. of St	ructures	Dimer	nsions	identification	Mineral Class		<del></del> ,		1 = y	es, blank	= no
	Sid Opening		Printary	Total	Length	Width	Toomanoation	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
H	4-6	ND								,				
	K4-6	MD			P	40	A 8	10 Luntin	h£_	5%	6 de los			
	H4-6	CM			Ph	2	3 7	Opendu	+	50	delis			
	G4-6	MD												 
	F4-6	WD						b						
B	14-1	ND						40	3/7/0	2				
	K4-1	M						//	, ,					
	H4-1	M					'							
	64-1	ND												

#### Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm<sup>2</sup> clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration, s/cc =  $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000\text{cc}}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



March 9, 2012

Laboratory Code: Subcontract Number: RES NA

Laboratory Report:

RES 231269-1

Project # / P.O. #
Project Description:

None Given
3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 231269-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE |. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 231269-1

Client:

Client Project Number / P.O.:

R & R Environmental

Client Project Description: Date Samples Received:

None Given

3rd West Sub - RMP March 8, 2012

**Analysis Type:** 

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 9, 2012

Client ID Number	Lab ID Nu	Lab ID Number		Area Air Analyzed Volume Sampled		Analytical Sensitivity	Asbestos Concentration	Filter Loading	
			(mm²)	(L)	•	(s/cc)	(s/cc)	(s/mm²)	
3W-030712 W	EM	871998	0.0900	946	ND	0.0045	BAS	BAS	
3W-030712 N	EM	871999	0.0900	948	ND	0.0045	BAS	BAS	
3W-()30712 E	EM	872000	0.0900	884	ND	0.0048	BAS	BAS	
3W-030712 S	EM	872001	0.0900	946	ND	0.0045	BAS	BAS	

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity
Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed C ellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

#### TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 231269-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

March 8, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 9, 2012

Client ID Number	Lab ID Number		Asbestos Mineral	Asl	bestos Str	ucture Tyj	oes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for	
			_	Fibers	Bundles	Clusters	Matrices	-		Concentration	
3W-030712 W	EM .	871998	ND	0	0	0		) 0	0	0	
3W-030712 N	EM	871999	ND	0	0	0	(	) , 0	. 0	0	
3W-030712 E	EM	872000	ND	0	0	0	(	0	0	0	
3W-030712 S	FM	872001	ND	0	0	0	. (	) 0	0	0	

<sup>\*</sup>See Analytical Procedure for definitions

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to incorrect aspect ratio

ND = None Detected

Due Date: 3-9-12 Due Time:

Reservoirs Environmental, inc. 8601 Logen St. Denver, CO 80216 - Ph.: 303 964-1088 - Fax 303-477-4276 • Toll Free :886 RESI-ENV Page 1\_\_\_ of \_/ Pager: 303-509-2098 INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION: RER Environmenta Company Contact: 47 W 4000 5 #2 Address: Sundy W. 84020 CalVosgar Project Number and/or P.O. #: Project Description/Location: West Sub-RND ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm REQUESTED ANALYSIS **VALID MATRIX CODES** LAB NOTES: RUSH (Same Day) A PRIORITY (Next Day) STANDARD Air = ABulk = B (Rush PCM = 2hr, TEM = 8hr.) Dust = D Paint = P CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pm Soil = S Wipe ≈ W RUSH 24 hr. 3-5 Day Metal(s) / Dust Swab = SW F = Food \*\*Prior notification is RCRA 8 / Metals & Welding Drinking Water ≈ DW Waste Water = WW Point Count required for RUSH \_ RUSH \_\_\_ 5 day \_\_\_10 day Fume Scan / TCLP O = Other Preps turnarounds.\*\* 24 hr. \_\_\_ 3 day 5 Day Organics \*\*ASTM E1792 approved wipe media only\*\* MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm E.coli O157:H7, Coliforms, S.aureus 24 hr. 2 Day OSHA 48 Hr. \_\_\_3-5 Day Salmonella, Listeria, E.coil, APC, Y & M METALS - Analyte(s) \_\_\_\_\_ RCRA 8, TCLP, Welding RUSH \_\_\_24 Hr \_\_\_48 Hr \_\_\_3 Day \_\_\_ "Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for afterhours, weekends and holidays." Watrix Code Special Instructions: EM Number (Leborator Date Time (yinO eau Collected Collected Client sample ID number (Sample ID's must be unique) hh/mm n/p 1/3W -030712W 3/07/12 3W-0307(2 N 948 3W-030712 E 01 8 8 10 (Additional samples shall be listed on attached long form.) Number of samples received; NOTE: REI will analyze mooming samples based (1920) Islamisation received and will not be responsible for errors or omissions in escultations resulting from the insecuracy of original data. By aligning client/company reprosentative agrees that submission of the losewing samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment temps may result in a 1.5% monthly interest surcharge. Sample Condition: On ice Sealed intact

Relinquished By: Laboratory Use Opt Temp. (F°) Yes / No Yes / No PES/No Data/Time: 3512 Received By: Carrier 4 Results: Contact Phona Email Fax Date Time Initials Contact Émali) Fax Date Time Initials Contact Phone Email Fax Date Time Initials Contact Phone Smail Fax Date Time tnitials

7933 1303 8378 7-2011\_version 1

### Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
	N.
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

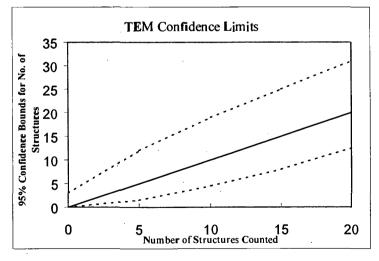
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

#### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	(20KX 10KX
Grid opening area (nim2)	0.010
Scale: 1L a	0.28 um
Scale: 1D =	0.56 um
Primary filter area (nim2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	1242
Sample Type (A=Air, D=Dust):	4
Air yolume (L) or dust area (cm2)	946
Date received by lab	3/9/12
Lab Job Number:	231262
Lab Sample Number:	1971998

F-Factor Calculation (Indirect Preps Only):										
Fraction of primary filter used										
Total Resuspension Volume (ml)										
Volume Applied to secondary fitter (ml)										

Analyzed by	- file
Analysis date	3/8/12
Method (O=Olrect, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storaga location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
	Ond Opening	Туре	Primary	Total	Length	Width	TO THE STATE OF TH	Amphibole	С_	NAM	Skefch/Cornrnents	Sketch	Photo	EDS
A	F3-1	IN												· <del></del>
	23-1	W								,				
	23-6	M			Kr	er A	150%	ndact 37	57.	Reb	<u>rs</u>			
	.63-6	M			Pn	cp &	3~4	Sunfl	me	3/	8/12			
	PU-3	M						, ,		,				
B	K4-3	W												
	45-4	M											·	
	62-4	MO												
	96-3	M												
	<u> </u>											·		

Laboratory name:	REI
Instrument	JEOL 100 CX (A) S
Vollage (KV)	100 KV
Magnification	20KX JOKX
Grid openino area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Туре	

- TEN ASDESIES SILUE	tate Count
Client :	RrR
Sample Type (A=Alr, D=Dust):	A
Air voluma (L) or dust area (cm2)	948
Date received by lab	3/8/12
Lab Job Number:	231269
Lab Sample Number:	871999

Analyzed by	JB
Analysis date	3/4/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps C	only):
Fraction of primary filtsr used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures Dimensions		nsions	Identification	Mineral Class				1 = y	es, blank	= no
Gild	Grid Opening	Туре	Primary	Total	Length	Width	igon(illeation	Amphibole	c ·	NAM	Sketch/Commenis	Sketch	Photo	EDS
A	K4-3	ND		,			 							
	H4-3	ND		·		Pro	A 70	Then for	6	5%	bbus			
	64-3	D				Bus 1	3 60	% inhous		2/0	debig			
	F4-3	WD_				. '								
	E4-3	ND						13	3/	1/12				
3	K3-3	ND		•					/	/				
	H3-3	NO						/						
	H4-6	10												
	64-6	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX (S) S
Voltage (KV)	100 KV
Magnification	20KX OKX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	· · · ·

	ture Courte
Client :	RNZ
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	884
Dale received by lab	3/8/12
Lab Job Number:	23/2
Lab Sample Number:	872000

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (mi)					

Analyzed by	JB
Analysis dale	3/9/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = ye	es, blank	= no
Ond	Ond Opening	Туре	Primary	Total	Length	Width	locitification	Amphibole	c ·	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-3	MD		:								-		
	H4-3	WD.			Par	5 A	80%	capyt	5/	del	ovis			
	614-3	ND			Pry	6	80%	caful	5	a de	bus			
	F4-3	· ND						1						
	E4-3	ND		·				115 31	9/12					
B	64-3	ND				-			/′					
	174-3	ND												
	1943	M					-							
	F4-3	W												

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotile

NAM = Non-asbestos material

T:\Worksheej in TEM Bench sheet dee

Laboratory name:	REI
Instrument	JEOL 100 CX ( S
Vollage (KV)	100 KV
Magnification	20KX 20KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

RAR
A
946
3/8/12
23/2
872001

Analyzed by	JB
Anatysis date Method (D=Dlrect, I=Indirect, IA=Indirect, ashed)	3/9/12 D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):						
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	identification	Mineral Class				1 = y	es, blank	= no
Ond	Ond Opening	Туре	Primary	Total	Length	Width		Amphibole	c ·	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-4	ND												
<u> </u>	613-4	M			Pin	A	70/	cu but	5	-70	La debra			
	F3-4	M			Pm	03	70%	butnot		-70	lo dela 3			
	E3-4	QN			· 				4					
	13-4	ND						1		3/4/1	2			
B	H33	ND								17				
	633	MD						/						
	F3-3	ND											:	
	E3-3	ND												
										:				

### Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

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micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed,  $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$ 

Concentration, s/cc =  $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



March 9, 2012

Laboratory Code:

RES

Subcontract Number: Laboratory Report:

NA RES 231270-1

Project # / P.O. #

None Given

Project Description:

3rd West Sub - RMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 231270-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-00 | 5

### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 231270-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

March 8, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

lull	ai Cuiiu.	
Date	Samp les	Analyzed:

March 9, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Nu	ID Number		Analyzed Volume Sampled		Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-030612 W	EM	872002	0.0800	999	ND	0.0048	BAS	BAS	
3W-030612 N	EM	87 <b>2</b> 00 <b>3</b>	0.0800	999	ND	0.0048	BAS	BAS	
3W-030612 E	EM	872004	0.0800	999	ND	0.0048	BAS	BAS	
3W-030612 S	EM	872005	0.0800	999	ND	0.0048	BAS	BAS	

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity
Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 3-9-12 Due Time:

# 5801 Logen St. Deriver, CO 80216 • Pir 503 264-1880 • Fax 303-477-4275 • Toll Free :886 RESI-ENV Pager : 303-309-2098

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	INVOICE TO: (II	F DIFFE	EREN	T) _		_							CO	NTAC	ΓINI	OR	MATIC	)N:				
Company: RFR Engranmental	Company:						Dav	1e (	205	kell	U					Contac		vslov	1 Kerry	5		
Address: 41 W. 90005, #Z	Address:					ons;										Phone						
Sandy U. 84070	<u> </u>				Fa											Fax			### :-			
Project Number and/or P.O. #:	<u> </u>				Ca	II/page	ta Deliv	215	41-	<u>-D'</u>	<u> </u>					Cervpe	iger: 8	O(	828-52	<u>19</u>		
Project Oescription/Location: 3v2 Wast Sub - RMP							12 DOIN															1
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PLM / PCM (TEM)RUSH (Same Day) PRIORITY (Next Da	y)STANDARD	1 }	}	-	1	1	11		} }		1	11			Air =		_		lk = B	<u> </u>		
(Rusii PCM = 2hr, TEM = 6hr.) CHEMISTRY LABORATORY HOURS: Weekdays: Sam - Spin		-	- [	- {			11						- 1		ust =				int = P	<del> </del>		
Metal(s) / Dusi RUSH 24 hr 3-5 Day		4	. (	- (	1 1		1								oil = ab =				e = W Food	<del> </del>		
PCPA 8 / Matale & Walding	**Prior notification is		L Creat	-			11		8		•						w w		/ater = WW	<del> </del>	<del></del>	
Furne Scan / TCLP RUSH 5 day 10 day	required for RUSH turnerounde.**	Point Count			Metals Scan		11		Quantification	1		휥	a l	D) IVILLATI	, ,,,,,,,		= Ottre		10.01	<del> </del>		
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E.coll O157:H7, Coliforms, S.aureus 24 hr. 2 Day	3-6 Day	Tabout 1	Ę Ę	S P	rta(s) Welding Fume,		11	1	7 3		fig.	8	5	ı				- 1				
Salmonella, Listeria, E.coli, APC, Y & M 48 Hr 3-5 Da	-	101	_ W   '	Resourable	1 2	·	11.		اً إِنَّ ا	6 6	ouanii	Eg	5		•							
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Special Instructions:	<u> </u>	Short report,		7400A,	:   • ⊭	છું	Satmonella: +/-	i i	요 구	Ė	igi +	‡	2	Ş	Code	190				EAR No.		
			· T	7.1	ി ഇട്ട	¥		ster	ent.	Coliforms	S.aumer Y. & M.	ğ	2	Sample V (L) / Area	ξ.	at	Date	١.	Time		m <b>ber</b> (Lei Jse Only)	xoratory
Client sample ID number (Sample ID's must be unique	<b>e</b> )		Series	PCM	METALS RCRA 8,	ORGANICS - METH	0770		CROB			ا ا	<b>E</b>	Sample Volume (L) / Area	Matrix	# Containe	Collec mm/sp		Collected			
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Number of samples received: (Addit  NOTE: REi will ensiyze incoming samples based upon information received and will not be	ional samples shall be listed o		•	•		are.	of odo	almai di		- eidel	no clies	nthan	nenu rên	rocenteth	9 eam	ae ihe	- hml	on of ti	ta follouina e	emplee for re	an marked	
analysis as indicated on this Chain of Qustody shall constitute an analytical services agree															- ug		- AUM 11188			Milpios IO 10	4-0300	
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Relinquished By: Laboratory Use Only					ıme: _	10	7	_		_	_			_		Cond F*)	lition:	_		Sealed Yes / No	Intact Yes? N	•
Received By:	ate/Time: 3512	_ ~	9	<u></u>	- Carrie	er:	E	2	Æ.	73-	<u>-</u>				(	·			37.40	537140	G991V	
Results: Contact Phone Email Fax Date	Time In	itiais	Conf	act			Pho	ne	mglf	Fax				Date				Time		Initia	ls	
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		7-2	011_	versi	on 1	,	9	,		~												

### Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

### Asbestos Type

#### Structure Types

•	
A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

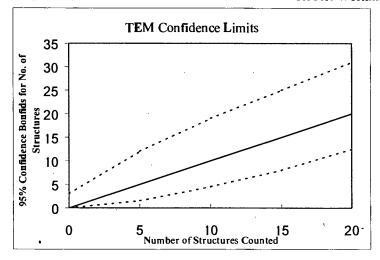
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX 🕟 S
Voltage (KV)	100 KV
Magnification	20KX OKX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	3/8/12
Lab Job Number:	231270
Lab Sample Number:	87 2002

Analyzed by	JB
Analysis date	3/9/2
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Fraction of primary filter used	T T	
Total Resuspension Volumo (ml)	+	 <del></del>
Volums Applied to secondary filter (ml)	Ţ <u>-</u> -	 

Grid	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class		,		1 = y	es, blank	= no
Ond	S.id Opening	Туре	Primary	Total	Length	Width	, acrimodion	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-3	ND												
	65-3	ND			(	Ins /	80	Conhut	5	107	debus			
	F5-3	ND			F	and a	B 70%	Confort	5-	10%	delis			
	E5-3	M								·			,	
B	64-4	ND						18	3/4/12					
	F4-4	ND						//	//					
٠.	E4-4	M				·		. ,.						
	64-4	DN												

Laboratory name:	REt
instrument	JEOL 100 CX (b) S
Voltage (KV)	100 KV
Magnification	20KX 0KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	3/8/12
Lab Job Number:	231270
Lab Sample Number:	87 2002

Analyzed by	JB
Analysis date	3/1/2
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary flitsr used	· .				
Total Resuspension Volume (ml)					
Volums Applied to secondary filter (ml)					

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
			Primary	Total	Length	Width	.commodion	Amphibole	С	NAM	Sketch/Commenis	Sketch	Photo	EDS
A	H5-3	ND												
	65-3	ND			(	mo /	80	Conhut	5-	107	debus			
	F5-3	ND			P		B 70%	Confort	5-	10%	Lebis	İ		
· 	E5-3	M			· .									
B	64-4	ND						18	3/4/12					
	F4-4	ND						//	1/					
	E4-4	S						, , , , , , , , , , , , , , , , , , ,		· 				
	64-4	DN									·			
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Reservoirs	Environmental, Inc.
TEM Asbes	tos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX 🐼 S
Voltage (KV)	100 KV
Magnification	(20KX )0KX
Grid openino area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QА Туре	

Client	PR
Client :	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	3/8/12
Lab Job Number:	231270
Lab Sample Number:	87 2002

Analyzed by	JB
Analysis date	3/1/2
Method (D≂Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary fillar used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (ml)					

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Idenlification	Mineral Class				1 = y	es, blank	= no
Ona -	Cha Operang	Туре	Primary	Total	Length	Width	tachimodich	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	45-3	ND					·							
	615-3	ND			(-	mo /	80	Conhut	5	107	debus			
	F5-3	ND			F	and T	B 70%	Contrat	5-	10%	delice			
	E5-3	ND												
B	64-4	M						18	3/4/13	,				
	F4-4	ND						//	1/					-
	E4-4	S		_				,						
	64-4	DN				i 								
				:										
						,								

Laboratory name:	REI	Client :	RAR
instrument	JEOL 100 CX (1) S	Sample Type (A=Alr, D=Dust):	A
Voltage (KV)	100 KV	Air volume (L) or dust area (cm2)	24
Magnification	20KX JOKX	Dale received by lab	3/8/12
Grid opening area (mm2)	0.01	Lab Job Number	2312
Scale: 1L =	0.28 um	Lab Sample Number	872
Scale: ID =	0.056 um	F-Factor Calculation (Indirect Preps O	nly):
Primary filter area (mm2)	385	Fraction of primary filter used	

Total Resuspension Volume (ml)

Voluma Applied to secondary filter (ml)

Analyzed by	JB
Analysis date	3/4/12
Method (D≖Direct, l=Indirect, IA=IndIrect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimei	nsions	Identification	Mineral Class				1 = y	es, blank	= no
0	Ond Operarig	Туре	Primary	Total	Length	Width	recramoutori	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	1+3-6	ND												<u> </u>
	613-6	ND			Pay	4	80%.	hut 5	Ldeb	<u> </u>		ļ 		
	F3-6	ND			Pur	-3	90 %.	hut 5	lo de	61.5				
	E3-6	ND						1						ļ
3	614-6	ND					1	B 3/4/12	<u> </u>		:			· .
	F4-6	ND						//						
	64-6	ND					$\iota$							
	64-6	ND												

Secondary Filter Area

(mm<sup>2</sup>)

QA Type

Laboratory name:	REI
Instrument	JEOL 100 CX (A) S
Voltage (KV)	100 KV
Magnification	20KX OKX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
ОА Туре	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	3/8/12
Lab Job Number:	231270
Lab Sample Number:	872004

Analyzed by	JB
Analysis date	3/9/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	P
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Anaiyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Totel Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
- Grid	Ond Opening	Туре .	Primary	Total	Length	Width	racritimodion	Amphibole	C	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-1	7												
	613-1	20			Pus	5 A 9	B ~ 8	O'Lo intent		5-10	la de las			
	E3-1	ND			(			1						
	E3-1	ND						\$	3/2	12				
B	K3-6	ND						//	/ /					
	H3-6	NO												
	63-6	ND												
	F3-6	W)												
									·					

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotile

NAM = Non-asbesios material

T:\Workshaat in TEM Bench sheet doc

Laboratory name:	REI
Instrument	JEOL 100 CX (1) S
Voltage (KV)	100 KV
Magnification	20KX JOKK
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	999
Date received by lab	3/8/12
Lab Job Number:	231270
Lab Sample Number:	87 2005

F-Factor Calculation (Indirect Preps Only):								
Fraction of primary filter used								
Total Resuspension Voluma (ml)								
Volume Applied to secondary filter (ml)								

Analyzed by	JB
Analysis date	3/9/12
Method (D=Direct, I=Indlrect, IA=Indlrect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-1	ND												
,	613-1	ND			Pa	1	819	To a ten	1	50	& defens			
	F3-1	ND			Pu	B	70	% intrut		5-5	Lolous			
	E3-1	ND.						6		/				
3	H2-3	ND					·	4B	3/1	17				
	(92-3	ND						//	7 7					
	F2-3	ND										} }		
	E2-3	ND												

# Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confinnation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

# **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration,  $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



March 12, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report:

RES 231362-1R None Given

Project # / P.O. #
Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 231362-1R is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

# RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

# TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 231362-1R

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

March 9, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 9, 2012 .

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Nu	ımber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-030812 W	EM	872178	0.0900	945	1	0.0045	0.0045	11.1
3W-030812 N	EM	87 <b>21</b> 79	0.0900	943	ND	0.0045	BAS	BAS
3W-030812 E	EM	872180	0.0900	9 <b>3</b> 9	ND	0.0046	BAS	BAS
3W-030812 S	EM	872181	0.0900	939	ND	0.0046	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity
Average Grid Opening in mm<sup>2</sup> = 0.010 Effective Filter Area = 385 sq mm

DATA QA

# RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 231362-1R

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

March 9, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 9, 2012

Client ID Number		Lab ID No	umber	Asbestos Mineral					Structures >5 Microns	**Excluded Structures	Asbestos Structures
	:				As	bestos Str	ucture Ty	pes*	in Length		for
				-	Fibers	Bundles	Clusters	Matrices			Concentration
3W-030812 W		EM	872178	Chrysotile	0	. 0	0	1	0	0	• 1
3W-030812 N		EM	872179	ND	0	0	0	0	0	0	0
3W-030812 E		EM	872180	ND	0	0	0	0	0	0	0
3W-030812 S		EM	872181	ND	0	0	0	0	0	0	0

<sup>\*</sup>See Analytical Procedure for definitions

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to i ncon ect as pect ratio

ND = None Detected

Page

CONTACT INFORMATION:

Due Date:

Due Tims:

PLM / PCM / TEM /	Daily: LEK	Environmenta	11, 2nc. 6	coopeny:					Ċ	alea (F	24.1/1	e_E	(09	<u>-e1</u>	<b>167</b>			Cant						_
Page 1 Nove mode? 1.0 R   Page 1 Nove mode	47 W	90005. #2	- 4	kødrest:							<del>-</del>													_
Page 1 Nove mode? 1.0 R   Page 1 Nove mode	-Sandy-	117 G4071		· <u>·</u>							10.		- <del></del>	) A	<del>26</del>			1				<u> </u>		_
ASSESTOS LABORATORY HOURS: Weekdays: 7ain - 7pim PRIM FORM (TEX) RUSH (Same Day) X PRIORITY (Next Day) STANDARD (Rush PCM = 2ni, TEM = 50.1) CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pim Model(c) I Dust = 0 RUSH (Same Day) X PRIORITY (Next Day) STANDARD (Rush PCM = 2ni, TEM = 50.1) RORIGORY HOURS: Weekdays: 8am - 5pim Model(c) I Dust = 0 RORIGORY HOURS: Weekdays: 8am - 5pim Model(c) I Dust = 0 RORIGORY HOURS: Weekdays: 8am - 5pim RORIGORY LABORATORY HOURS: Weekdays: 8am - 6pim Lorigorian								<u> </u>			2	1/	A Addm	70	<u> </u>			104	pegar.					_
ASSESTOS LABORATORY HOURS: Weekdays: Tain - Tpim  REQUESTED ANALYSIS  VALID MATRIX CODES  LAB NO  PLM / FCM / Teb.  RUSH   Same poply   FNORTIY (not Day)   STANDARD  CHEMISTRY LABORATORY HOURS: Weekdays: same - Spm  Motolici / Dust  RUSH   Same poply   Same					<del></del> _		<u> </u>	·	''	(II Cough		ow Mil	, , , , , , , , , , , , , , , , , , ,	_		•								
PLM / PCM (7EB)RUSH (Samp Day)PRIORITY (Next Day)STANDARD																		=						_
CHEMISTRY LABORATORY HOURS: Weekdays: Barn - Spin   Model(c) / Dust   RUSH   24 hr	BESTOS LABORATO	)RY HOURS: Weekdaya: 7/	ain - 7pm						REQU	ESTE	DA	IALY	SIS		, ,	<b>_</b>	VA	LDA	MATRIX			LAE	NOTES:	_
CHEMISTRY LABORATORY HOURS: Weekdays: 8em-5pm   Femostary to the state of the sta	A / PCM / TER			STANDARD	)	{		. !	1 .	ΙÍ	11	- 1 i			1									_
Mote   Post										1 1	-1-1	11	li	-				_				<del></del>		_
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Organics  28 hr. 3 day 8 Day  MICROBIOLOGY LABORATORY HOURS: Weekdays: Sam - 6pm  Ecoli Older Jrd, Collionas, Saureus  24 hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24 Hr. 3-8 Day  Sainsversilla, Litstria, E.celli, APC, Y & 6th Mold  RUSH 24		RUSH 5 day	10 day			[ ]			5	1 1		8	-		<u>و</u> پ	Dianker	gvn				- 441			-
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RESERVOITS ENVIronmental, Inc. 500 legan St. Oanver, CO 80216 - Ph 903 900-1956 - Fax 303-471-4876 - Tol Free 600 RESI-ENV

Pagar: MS-501-29M INVOICE TO: (IF DIFFERENT)



# Attachment I

Key to Count Sheets
Count Sheets
Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

# Asbestos Type

# Structure Types

Α	=	Amosite	F =	Fiber
		Anthophyllite	-	Bundle
		Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
T	=	Tremolite		

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

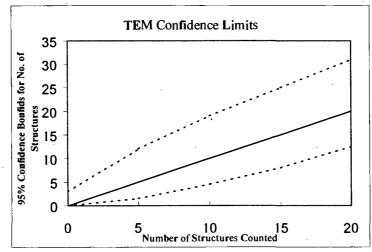
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

# **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	<b>菲斯斯斯尼尔斯斯</b> 斯

Client :	A+R
Sample Type (A=Alr, D=Dust):	
Air volume (L) or dust area (cm2)	1945
Data received by lab	2/9/17
Lab Job Number:	43 136 F
Lab Sample Number	872176

Analyzed by	116
Analysis date	3/7/12
Method (D=Direct, I=Indireci, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of St	No. of Structures		nsions	Identification	Mineral Class			1 = yes, blank = no			
Ollu		Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
1	K3-3	M		l	2	(	S		_		in GB			
	H3-3	M												! 
	43-3	M			Cne	PA	80% INA	act 52	lebr	3				
·	F3-3	M			(n	er B	M	South		/7/	2			
	23-3	Ŵ												
3	46-4	ino								1				
	96-4	M												
	7-6-4	M												
	25-4	M												

Laboratory name:	RE
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	(20KX)10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	AHK IN
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	12 <b>1</b> 3 11
Date received by tab	12/2/12
Lab Job Number:	<b>海路路在东</b>
Lab Sample Number:	872173

Analyzed by	11L
Analysis date	3/1/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	創心 PinD
Counting rules (ISO, AHERA, ASTM)	44
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):						
Finiction of primary filter used						
Total Resuspension Volume (ml)	·					
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	Dimensions Identification		Mineral Class			1 = yes, blank = no		= no	
		Туре	Primary	Total	Lenoth	Width		Amphibole	c ·	NAM	Sketch/Contiments	Sketch	Photo	EDS
1	+23	W								-				
	23-3	M		·		l re	PA 80	6 insact	57,0	lebr	S			
	C3-6	W				Pres	B ~を	1) Mact	57	de	iris .			.
	B3-6	M												
	A3-6	NO												
B	92-1	M		,										
	F2-1	M											·	
	22-1	M				-								
	43-4	M)						·						
												,		

Client:	PHREE R
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	
Date received by lab	19/19/A
Lab Job Number	231297
Lab Sample Number	872186

Analyzed by	AL
Analysis date	3/9/12
Method (D=Direct, I=Indiract, IA=Indirect, ashod)	P.D.
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Lab Sample Number:	5+2/09					
F-Factor Calculation (Indirect	t Preps Only):					
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary filte (ml)	r .					

Grid	Gdd Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
	Odd Oponing	Туре	Primary	Total	Length	Width		Amphibola	C NAM		Sketch/Comments	Sketch	Photo	EDS
1	1-4-3	M		-  -										
	K43	W				Pres	A 907	insuca 5	-72	cleb	rīs			
	44-3	M				Cre	B 702	what is	- 7	r Le	is bus fry	/2-	3/9/	1/2
	94-3	M												<u> </u>
	F4-3	M												
B	K4-4	W		·					<u> </u>					
	H1-4	M				<u>-</u> .								
	H2-3	M												
	923	M												

Laboratory nanie:

Instrument Voltage (KV) Magnification Grid opening area

(mm2)

(mm2)

(mm2) QA Type

Scale: 1L =

Scale: 1D = Primary filter area

Secondary Filtar Area

JEOL 100 CX NOS

0.28 um

Laboratory name:	REI
Instrument	JEOL 100 CX NOS
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grkl opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

<b>2</b>
#2Darum
<b>湖路</b>
87.2181

F-Factor Calculation (Indirect Prep	s Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AL
Analysis date	3/9/12
Method (D≠Direct, I=Indirect, IA≖Indirect, ashed)	
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location_	Month Analyzed
Scope Alignment	Date Analyzed

Grkl	Grid Opening	Stmcture	No. of St	ructures	Dimer	Dimensions Identification Mineral Class						1 = yes, blank = no			
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS	
1	K5-6	M									·				
	H3-6	M				ln	4 A 7	0% words	520	Cebr	3				
	95-6	M			<u> </u>	Pre	4 B. 8	Untact	53	deb.	3 Jorg	la s	2/21	re	
	H3-3	M													
	95-3	M						·						ļ.	
3	H36	M													
	G3-6	149												_	
	F3-6	M									·				
	23-6	M													

# Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all f bers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration, s/cc =  $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{i}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{\text{1000cc}}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures
Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



March 13, 2012

Laboratory Code: Subcontract Number:

RES NA

Laboratory Report: Project # / P.O. #

RES 231462-1 None Given

**Project Description:** 

3rd West Sub - RIMP

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 231462-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

# RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

**RES Job Number:** 

RES 231462-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

March 12, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 13, 2012

Client ID Number	Lab ID Number		Area Analyzed	Air Volume Sampled	Number of Asbestos Structures	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)	Detected	(s/cc)	(s/cc)	(s/mm²)
3W-030912 W	EM	872323	0.0900	900	2	0.0048	0.0095	22.2
3W-030912 N	EM	872324	0.1000	600	1	0.0064	0.0064	10.0
3W-030912 E	EM	872325	0.0900	900	ND	0.0048	BAS	BAS
3W-030912 S	EM	872326	0.0900	898	ND	0.0048	BAS	BAS
NA = Not Analyzed ND = None Detected BAS = Below Analytical Sensitivity Average Grid Opening in mm <sup>2</sup> = 0.010			Filter Diame	al = Mixed C e ter = 25 mm er Area = 385			Deptashy signed by Elemin Elemina Dev Col = Elemina Elemina C = Generican Environmental Environmental Deservoir 2012 03 13	,

# RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101898-0; TDH: #30-0015

#### TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 231462-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

March 12, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

March 13, 2012

Client ID Number	Lab ID Ni	Lab Asbestos ID Number Mineral			bestos Str	ucture Tyj	oes*	Structures >5 Microns in Length	**Excluded * Structures	Asbestos Structures for		
			_	Fibers	Bundles	Clusters	Matrices	_		Concentration		
3W-030912 W	EM	872323	Chrysotile	2	0	0	0	0	0	2		
3W-030912 N	EM	872324	Chrysotile	1	0	.0	0	0	0	1		
3W-030912 E	EM	87 <b>232</b> 5	ND	0	0	0	0	0	0	0		
3W-030912 S	EM	87 <b>2326</b>	ND	0	0	0	0	0	0	0		

<sup>\*</sup>See Analytical Procedure for definitions

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to i nconect aspect ratio

ND = None Detected

Due Date: 3.13.12 Due Time: 950c

# S801 Logen St. Oeneer, CO 80216 • Ph; 303 864-1988 • Fax 303-417-4278 • Toll Fire :888 RESI-SNV

RES 231402

	INVOICE TO: (i			ENT)									C	ONTAC	T IN	FOR	MATION:	<u>:</u>			
Company: Rek Eurigenmental	Company:					Conta	⊄ Dc	ive	1	ماد	lla.		<u>_</u> _			Conta					
Address: 47 W 9000 5 42	Address:					hone	r:				•					Phore	p:				
Sondy UL SUDTO						BX.										Fax:					
						Cell/pager: 90 1 541 - W35 Cell/pager. Final Osta Dailverable Email Addrest:								ager.							
Project Number and/or P.O. #:											-										
Project Description/Location: 3 PWest Sub-RNV	<del></del>				1		due	<u>e</u> ,	me/	win	<u>ئ، رہ</u>	<u></u>									
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(Rush PCM = 2hr, TEM = 6hr.)		1		1 1	- 1 1		11		1.	1	\	i			oust :	= D	!	Painl = P			
CHEMISTRY LABORATORY HOURS: Weekdays: Saiti - Spin		<u> </u>		1 1								ŀ		_	Soli =	_	<del></del>	Nipe = W	+		
Metal(s) / Dust RUSH 2-t hr 3-5 Day	**Prior notification la	1	Ouan,			-			=						vab =			F = Food			
RUSH 5 day 10 day required for RUSH		15	\ \delta \ \	. 1 1		Sea	11	1	] <del>§</del> [			Į,	w	Drinkir	king Water = DW W			ı vvater = vv	<u>w  </u>		-
Organics 24 hr 3 day 5 Day	turnarounda.**	Point Count	÷ Be			SS	- [ ]	-	auti	-		E S	NOTES	*AS	IM E1		) = Other	e media only			
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E.coli Q157:H7, Coliforms, S.aureus 24 hr. 2 Da		18	7402, 150-Indi	≰	] [	Ē.			٥	Intification Ovantification		ء ا۾	OTHER					İ			
Salmonella, Listeria, E.coli, APC, Y & M 49 Hr3-5 [	Day	Long re	~ 8		흥	Welding Fume,		-	*	₽IS	Quant		ξ.	l							
Mold RUSH 24 Hr	48 Hr3 Day5 Day		Vel II	7400B.	Respirable lyte(s)	동	_ ] . ]	<b>‡</b>	) j	å   b	5	割复	3	!							
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apply for afterhours, waskends and holidays."		그 등	AHERA,	7400A	Total	ਰੇ	e S	15	Ē			*   ‡	Ş	콩	g	20	12.7	1.		- 1	49-14-72-1
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			Se TE	PC ₩	DUST - Total, Respi	§	Salmonetta: +/-					- ≥	S S	Sample Volume (L) / Area	Matrix Code	# Containers	Collected	Collecte	ed .	, u	Uise Only)
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1 3W-039(12W	<del> </del>	ļ.,	K	<u>'   </u>		4		_	11	_	<del>     </del>	ļ.,		900	A		3/08/11			5 7	2323
2 3W-03091ZN						::10							: ¥ " ii.	600	$\perp \! \! \! \! \! \perp$	1: 4	<u> </u>				24
3 3W-030912 E			П		Ì		11							1900	$\parallel$			ŀ			25
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NOTE: REI will analyza incoming samples based upon information received and will not	ba rasponsible for arrora or omissions re	n calcula	ations ra	sutting f	rom tha in:										ve agr	ees the	nt submission	of the following	g sampi	as for rec	quested
analysis at Indicated on this Chain of Custady shall constitute an analytical sarvices agree	<del> </del>	lays, fsi	luna to c				<del>-</del>	+		% mo	nthly ir	19198	surebar	ge.							
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															•	70	33	239	73	5	サムラ

# Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

# Asbestos Type

# Structure Types

Α	=	Amosite	F =	Fiber
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
Т	=	Tremolite		

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

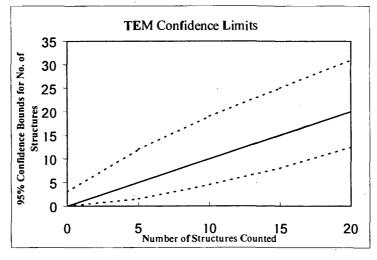
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

# **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filler area (mm2)	385
Secondary Filter Area (mm2)	
QA Typo	

Client:	RHR
Sample Type (A=Air, D=Dust):	
Air volume (L) or dust area (cm2)	945
Date received by lab	3/9/12
Lab Job Number	231367
Lab Sample Number:	8772176

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to seeondary filter (ml)	-				

Analyzed by	2/2/2
Analysis date	0/2/15
Method (D=Direct, I=Indirect,	winistrovities areas
IA=Indiract, ashed)	
Counting rules	lah skorte betak
(ISO, AHERA, ASTM)	A1T
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions		Dimensions		Dimensions		Dimensions Identification		Mineral Class			1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amohlbole	c ·	NAM	Sketch/Corriments	Sketch	Photo	EDS				
1	43-3	M		l	2_	į	S		\		GB GB							
	H3-3	M					·											
	43-3	M			Cre	p A	80% ind	act 57	lebr	3								
	F3-3	M		·	(n	er B	M:	Senfor		/9/	2							
	23-3	M						7 0										
3	46-4	M			<u>.                                    </u>													
	66-4	M																
	7-6-4	M									·							
	85-4	M																

Laboratory name:	。 東京教授 REI 東京教授 高麗 大学 大学 大学 大学 大学 大学 大学 大学 大学 大学
Instrument	JEOL 100 CX N/S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	THE PERSON

PHRIT
19/19/1241
2 2 13 C 31
672173

F-Factor Calculation (Indirect Preps Only):						
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary litter (ml)						

Analyzed by	AL
Analysis date	3/9/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	
Counting mies (ISO, AHERA, ASTM)	44
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimensions Identification		Mineral Class		·	1 = ves, blank = no				
		Туре	Primary	Total	Length	Width		Amphibole .	С	NAM	Sketch/Cornntents	Sketch	Photo	EDS
1	+2-3	100)												
	23-3	M				(re	PA 80	1 insact	57,0	leb 1	2			
	C3-6	M				Pres	B -70	1) Macs	57	de	ns.			
	B3-6	M				·								
	A3-6	ND		,										
B	92-1	M						•						
	F2-1	M												
	22-1	M									÷			
	43-4	M						.*						

Laboratory name:	REI
Instrument	JEOL 100 CX NO
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 uin
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	AHR THE
Sample Type (A=Air, D=Dust):	
Air.volume (L) or dust area (cm2)	
Date received by lab	1 P/100/1911
Lab Job Number	231566
Lab Sample Number:	872186

F-Factor Calculation (Indirect Preos Only):						
Fraction of primary filter used						
Total Resuspension Volume (mi)						
Volume Applied to secondary filter (ml)						

	(建筑するがみません)
Analyzed by	
Analysis date	3/9/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	A PAR
Couriting rules tISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grld	Grki Opening	Stmcture Type	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
			Primary	Total	Length	Width	i do i di da do li	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
1	1-4-3	M												·
	K43	W				Pres	A 907	insuct 5	-72	cleb	ČS.			
	H4-3	M				Cre	B 700	, intact is	-7	à Le	is bus fung	1/2	3/9/	112
	94-3	M												
	F4-3	M												
3	124-4	W			<u> </u>									
	H4-4	M				_								
·	H2-3	W												
	923	M												

Laboratory name:	REI
Instmment	JEOL 100 CX NOS
Voltage (KV)	100 KV
Magnification	20KX 10KX
GrM opening area (mm2)	0.010
Scale: 1L =	0.28 um
Scale: 1D =	0.56 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

ZHR.
TARABITE .
19/07/P
当
872/81

Lab Sample Number:	8年至18年					
F-Factor Calculation (Indirect P	reps Only):					
Fraction of primary filter used						
Total Resuspension Volume (mi)						
Volume Applied to secondary filter						

Analyzed by	all
Analysis date	3/5/12
Method (O=Direct, I=Indiract, IA=IndirecL ashed)	THE PROPERTY
Counting mies (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Stmcture Type	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
			Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
1	K5-6	M		-										,
	H3/6	M				Pno	rA 7	0% what	5%	Cebr	3			
	95-6	M				Pre	1 B. 8	meach	25	deb.	3 July	le s	2/3/	ram
	H3-3	M												
	95-3	M						·						
3	H3-6	M												
	G3-6	149				-								<u> </u>
	83-6	M												
	23-6	M												

### Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration,  $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening